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Changes to Underground Tank Rules Are Final

Chapter 691, the Department Of Environmental Protection's Rules for Underground Oil Storage Facilities, has been in the process of being updated for the past year. Those changes have now been finalized and adopted by the Maine Board of the Environmental Protection and the Secretary of State as of March 14, 2004. They impact owners, operators, and certified installers and inspectors.

Changes to Chapter 691 include updating references to national and industry codes cited in the regulations, as well as some changes in some installation and operation requirements, particularly for motor fuel, marketing and distribution facilities. Other "housekeeping" type amendments and corrections have also been made.

Updates in the various codes and recommended practices from industry and other national organizations are too numerous to mention here. All standards cited in this regulation can be found in an appendix. Some key standards that have been updated and incorporated include those published by the Petroleum Equipment Institute, the National Association of Corrosion Engineers International, the National Fire Protection Association, and Underwriters Laboratories.

A number of changes affecting the installation of new and replacement motor fuel, marketing, and distribution facilities have been adopted. These are all found in section 5 of the regulation. Here are some highlights of the more important changes:

1. A sump or pan with a leak detection sensor or probe is now required under all product dispensers. To ensure that the leak detection sensor in dispenser pans and piping sumps have an opportunity to do

their job in the event of a leak, any penetration of the sump should be three (3) or more inches above the sensor's activation level.



2. To better address overfills, the current leading cause of discharges, UST overfill buckets or sumps have been increased in volume from three (3) to 15 gallons, which more closely approximates the volume of the delivery tanker's hose.
3. A requirement for overfill protection at the loading rack of bulk plants is now required. Such overfill protection should have the capacity to contain a spill of at least 100 gallons of product. The regu-

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Inspecting Temporarily Out-of-Service Tanks

The introduction of Maine's annual compliance inspection law brought new (and probably unwanted) attention to the owners of inactive USTs. In response to questions from owners and the installer/inspector community regarding out-of-service tanks, the Department clarified its policy regarding annual compliance inspections of these tanks. Simply put, all tanks, regardless of status, require a passing annual compliance inspection.

Inspections of out-of-service facilities will hopefully be fairly simple and brief. Each out-of-service tank must continue leak detection, unless all product is emptied from the tank and no more than one (1) inch of residual product is left. Since leak detection is either impossible (for single-walled tanks using daily inventory and SIA) or costly (for continuously monitored tanks where somebody still has to be around to respond to any alarms), pumping the tank out is by far the best option. For those few owners that have the choice between draining or maintaining, the Department still recommends removing product from out-of-service tanks. An empty tank poses a much smaller risk to public health and the environment than a full one, and is much less costly to monitor and pay for.

Pumping out the tanks doesn't eliminate the need for maintenance completely; the cathodic protection system must be maintained in good working order for all CP tanks, regardless of how much product remains in the tanks.

Also, the vent lines must be open and functioning, and the fill riser, all other lines, pumps, manways and other access points (e.g., the ATG riser) must be capped and secured with a lock or bolt. As always, owners and inspectors need to report to the Department any evidence of a leak they might come across at the facility within 24-hours of discovery.

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Changes to Underground Tank Rules Final

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lation provides for a number of options to catch or direct the flow of spills in the loading area. As you are well aware the separation of contaminated from uncontaminated storm water is always an issue with such facilities. A subsurface discharge of potentially contaminated storm water is prohibited unless a discharge license is obtained from the Maine Board of Environmental Protection.

Because these changes are limited to new and replacement facilities, the department was asked to define what it meant by a replacement facility. A definition was included. In summary, a replacement facility is one where one (1) or more of its major components are replaced, such as a tank, piping, leak detection equipment or overfill containment equipment. Minor repairs or other repairs already allowed in the rule are not included. Generally, only the major component being replaced will need to meet the standards for new and replacement facilities. It isn't the intent of the regulation to require the upgrade of an entire facility in the event one component is replaced.

Also affected by changes to Chapter 691 are requirements for the operation and maintenance of UST facilities. The testing requirement for steel tanks protected from corrosion by galvanic cathodic protection (CP) has been made more protective for single-walled tanks. The number of test locations was increased from one (1) to three (3) over the tank's centerline; one (1) at each end and one (1) over the tank's middle. The testing requirements for double-walled CP tanks have not changed. Based on a Department field study of galvanic cathodic protection, we expect approximately 45% of CP tanks will fail the testing to document that they are adequately protected from corrosion. This equates to approximately 300 USTs. The new CP testing requirement applies to all single-walled steel tanks, including motor fuel, heating

oil, or waste oil USTs.

Recordkeeping requirements have been standardized. Most operation and maintenance records may be maintained at the owner's place of business but must be provided within 36 hours if requested by a Department representative. One exception is the log of surface spills smaller than 10 gallons, which still must be maintained at the facility itself. To qualify for this alternative form of spill reporting, the regulation has been clarified that the spill must be restricted to an impervious surface like asphalt or concrete.

Registration requirements have also been modified in some cases. If you are submitting a registration for a new or replacement facility, and the facility is located in an unorganized township, the copy that in the past went to the county commissioners will now be submitted to the Maine Land Use Regulation Commission. Registrations for new and

expanded facilities will require submitting GIS location information to ensure the facility meets the siting criteria in Maine law and in Chapter 691.

Site assessment requirements for removals were expanded to include portions of facilities included in the requirement in addition to the removal of whole facilities. Site assessment requirements now specifically apply to piping removals.

Copies of the amended regulation will be mailed to Maine certified installers and inspectors. Others wishing a copy will be able to do so soon by visiting the Department's website (www.state.me.us/dep/rwm/ustast/forownersandoperators.htm) or contacting the Bureau of Remediation & Waste Management directly at (207) 287-2651.

George Seel, Director, Division of Technical Services, Maine Department of Environmental Protection, Bureau of Remediation and Waste Management.

Inspecting Temporarily Out-of-Service Tanks

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In a typical out-of-service tank inspection report, the inspector will submit a signed Inspection Summary Sheet and the 8th page of the Inspection Report, which includes the sections on Cathodic Protection and Out of Service Tanks. Those facilities with more than one inch of product in the tanks should be **failed**, unless the primary leak detection system passes inspection and the relevant leak detection sections of the Inspection Report (page 2, 3, or 4) are submitted to the Department. Of course, tanks with more than one inch of product can pass their inspection if the product is pumped out and disposed of properly, either during the initial inspection or by returning to the site at a later date and submitting an Inspection Update.

To guide owners and operators through this process, we've developed a new, one-page form for owners to submit to update their registration when they temporarily deactivate their tanks (see page 3). This form will be made available on the web-site on the owners and operators page:

www.state.me.us/dep/rwm/ustast/forownersandoperators

Installers may also be involved in the return of inactive USTs to active service. Prior to re-starting operation, owners must submit an amended facility registration indicating their intent to return the facility to service. Tanks returning to service must comply with the Department's applicable leak detection, overfill and spill prevention, and operation and monitoring requirements. This may generate some work for Installers retrofitting, repairing damaged parts, or replacing ancillary parts that were removed when the tanks were decommissioned.

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Notification of Temporarily Out-of-Service Tank(s)

Maine's Ground Water Protection Law and the Department's Rules for Underground Oil Storage Facilities, Chapter 691, require the owner of an underground oil storage facility to amend the registration with the Department to reflect any changes in ownership, tank use, or facility upgrades.

The following underground oil storage tank will be temporarily out-of-service for a period not to exceed 12 months. I certify that:

- The corrosion protection system is being operated and maintained (cathodically protected steel, only)
(Check one)
- _____ Leak detection is continuing in accordance with applicable Rules, Chapter 691
or
- _____ All product has been removed from the tank with no more than one (1) inch of residual left
- Vent lines are open and functioning
- All other lines, pumps, man ways and ancillary equipment are capped and secured
- I will report and investigate evidence of a possible leak or oil discharge to the Department within 24 hours of discovery.

Facility Name _____ Registration Number _____

Owner Address _____

Tank Number _____ Tank Size _____ Product stored _____

Reason for temporary abandonment _____

Date tank taken out of service _____

Signature of Facility Owner or Operator _____

Please keep a copy of this form for your records and submit original to:

Maine Department of Environmental Protection, # 17 State House Station, Augusta, ME 04333
Attn: Underground Tanks
Phone (207) 287-2651

Note: State law and DEP Rules require removal of an underground tank or facility that is out of service for more than 12 months (1 year), unless the tank owner has requested in writing approval for tank to remain temporarily out-of-service for more than 12 months. The Commissioner may grant approval under a limited set of circumstances.

Baffled by a Leak? Check the Inventory Records.

Inventory control of fuel stored underground, though long recognized as an invaluable business practice and a valuable leak detection staple, has often been as palatable to UST system operators as Brussels sprouts to a five-year-old. The petroleum marketing trade press from the 1960s and '70s, a time when inventory control was touted as the first line of defense against leaks, documents that even in the face of a burgeoning storage system leak problem, inventory control was not a popular activity among service station operators. Given that inventory in those days required manual sticking, visual reading of totalizer meters, and pencil-and-paper arithmetic, it is no wonder that it seemed more a burdensome chore than a safeguard for economic well being against the possibility of a financial, environmental, or public relations disaster.

And, truth be told, while the mechanics of conducting inventory control are fairly straightforward, the interpretation of the resulting data can be complex. Most petroleum marketers had (and still have today) only a primitive understanding of the sources of error in inventory control and why it is that there are always differences between the book and the stick values in their inventory records. (For a discussion of sources of error in inventory control, see "Inventory Control – the Untold Story," LUSTLine #14.)

Today, reliance on inventory control for storage system leak detection, especially the kind performed completely manually, has largely been supplanted by more mechanically or electronically sophisticated methods. While most of these methods offer clear advantages in terms of leak detection accuracy and reliability, they can also foster an overly complacent attitude that nothing can go wrong. Putting all our leak detection eggs in one basket, even a basket as seemingly secure as secondary containment, has its pitfalls. Consider the following examples.

The Case of the Frosty Fill Pipe

A C-store was doing great – selling over a million gallons a year of gasoline – when the owners went bankrupt. They were puzzled as to why they couldn't seem to make any money. Their storage system was completely secondarily contained, their Automatic Tank Gauge (ATG) continuously monitored sensors in the tank interstitial spaces and the piping sumps, and they had electronic line leak detectors, to boot. It was not until an assessment conducted as part of a pending sale of the property revealed tens of thousands of gallons of gasoline in the subsurface that it dawned on all concerned that something had gone very wrong.

The operator had been a pack rat with regards to records, keeping daily sales reports from the point of sale system (POS), daily ATG printouts, and delivery receipts carefully stashed in boxes. But he had never bothered to do the math to track his gasoline inventory. When the inventory data were put together, it became glaringly obvious that some 3 to 4 percent of each delivery into the regular unleaded tank over a three-year period was unaccounted for. The total volume lost was estimated to be in excess of 50,000 gallons.

Because the tank was located in a northern climate and the fill pipe lacked a drop tube, a break in the fill pipe seemed like the most likely cause of the problem. Subsequent visual observation confirmed that the spill containment manhole had completely separated from the fill-pipe riser.

The Case of the Faulty Filter

A C-store/diner facility was less than a year old and business was good ... until the water acquired an unpleasant odor and taste. Water quality testing revealed hydrocarbons and MTBE. How could this happen? The facility was completely secondarily contained and equipped with an ATG that continuously monitored sensors in the tank interstitial spaces and the tank-top piping sumps. There had been no alarms.

Inventory records had been kept, but when things were busy they often slipped to the bottom of the "in" box and no one really looked at them. After all, the facility was virtually brand-new and state-of-the-art, so why bother with inventory records except to see how gasoline sales were doing?

When the "in" box was finally cleaned out, a review of the records revealed disturbingly large daily losses in

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The Long Haul:

For various reasons, some tanks need to be out of service for more than a year. In these instances, the tank owner needs to apply in writing for the Department's approval to allow the facility to remain temporarily out-of-service beyond the initial 12 months. DEP will grant permission under a limited set of circumstances, such as bankruptcy, foreclosure, and properties with newer tanks that are being actively marketed for sale.

Again, you'll be involved with these facilities' annual compliance inspections and when these UST facilities are returned to service. Once the registration is updated, the tanks need to be brought into compliance with the Department's applicable leak detection, overfill, and spill prevention requirements, and the tanks and associated piping must pass a 0.1 gallon-per-hour precision test.

So that's the story about out-of-service tanks. If you have questions, call Andrew Flint, at (207) 287-7850 or via e-mail at andrew.flint@maine.gov

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the super unleaded product for the previous month, amounting to some 5,000 gallons. Visual inspection revealed a dispenser sump with product in it and a leaking fuel filter. Further investigation found a leaky penetration fitting in the dispenser sump. Because there was no sensor in the dispenser sump, the leaky penetration fitting allowed the leaked product to escape silently from the secondary containment system without ever triggering alarms.

Murphy Rules

The moral of these stories is that storage systems are not yet exempt from Murphy's law. With that in mind, let us not forget the virtues of redundant leak detection systems in preventing mishaps from turning into disasters. Though inventory control is far from perfect, these stories illustrate how inventory can be very useful in spotting significant problems that much more sophisticated systems may fail to detect. And with today's technology for determining physical inventory, recording sales volume, and doing the actual math, keeping inventory records and figuring out what they are telling you is a much simpler process than it was 20 years ago.

Where to Begin?

So, you've got a pile of inventory records in front of you, now what? Maybe you want to know the magnitude or the duration of a leak, or maybe you are trying to determine if there is evidence of a leak in the records. Where do you begin? Because reading inventory records is not taught in high schools or colleges, I've prepared an 11-step primer on how to read inventory control records. These are tips that I have learned from reviewing multitudes of inventory records over the years. They are presented in order from simple to more sophisticated.

If you need a refresher on inventory terminology and how to do the calculations, refer to U.S. EPA's publication *Doing Inventory Control Right for*

Underground Storage Tanks.

(#EPA510-B-93-004, available on the Web at: www.epa.gov/oust/pubsindex.htm).

How Much Data?

Before we go to our primer, we need to think about how much inventory data is enough. Though one month is the industry and regulatory standard period for checking inventory variances, a month is rarely sufficient to get a firm handle on what is happening using the simple means described here. I like to see at least a year of records – and more is always better. It is often also useful to compare what is happening with the different petroleum products at the site, so don't forget to check the records for all products, even if you know which product leaked.

An 11-Step Primer on Reading



Inventory Records.

Step #1: If the math is done by hand, check the arithmetic.

Though inventory recordkeeping is increasingly automated, some folks are still in the pencil-and-paper era. There are many opportunities for computational errors and slips of the pencil in a 30-day inventory record. A simple procedure to check for these types of errors is to calculate the monthly variance using a process other than summing up the daily variances to see if you get the same result. To do this, follow these steps:

1. Start with the physical inventory (i.e., the gallons in the tank based on

a gauge stick or ATG reading) for the beginning of the month.

2. Add up all the delivery volumes for the month and add this sum to the beginning physical inventory.
3. Add up all the sales numbers for each day of the month and subtract this sum from the beginning physical inventory plus deliveries sum that you just calculated. This gives you the "book" inventory for the month.
4. Subtract this book inventory from the physical inventory for the last day of the month to calculate the monthly variance. The monthly variance calculated this way should be exactly the same as the monthly variance calculated by summing the daily variances for the month.

If the numbers are different, then there is a math error either in the calculation that you just did or in the original inventory record. This little check says nothing about whether the variance is acceptable or not, it just determines whether the variance has been calculated correctly. If you're doing this for more than two months' worth of data, it is probably worthwhile to construct a spreadsheet, using standard software, to do the calculations for you. If you don't feel like reinventing the wheel, an inventory calculation spreadsheet can be downloaded for free at www.kwaleak.com/technical/index.htm.

Step #2: If physical inventory is measured with a gauge stick, check the stick and the records to determine if measurements were made properly.

Check the gauge stick to be sure that it doesn't have a piece missing from the bottom and that the numbers are clearly legible. Also check the tank chart and try to determine if it is the correct chart for the tank. If you have no way of telling whether the tank chart is correct, don't worry, the inventory records will tell you (See Step #10, below).

If you are interested in checking the inventory records for regulatory

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compliance purposes, you need to know whether measurements were made to the nearest 1/8 inch. If inch measurements are recorded (as opposed to just gallons), you can verify that the required accuracy is being used by checking the frequency with which 1/8-inch measurements occur in the inventory record. In any given inch on a gauge stick, there is one whole-inch mark, one 1/2-inch mark, two 1/4-inch marks, and four 1/8-inch marks.

Because four out of the eight possible readings are eighths of an inch, then pretty close to half of all the measurements in an inventory control record should be 1/8-inch measurements (assuming that the liquid-level variation is random). If only a few measurements in a 30-day record are eighths of an inch, then measurements are not consistently meeting regulatory requirements.

Step #3: Count the positive and negative variances.

One of the most powerful methods for quickly evaluating an inventory record is to count the number of positive and negative daily variances of a month-long (or longer) period. If there are no leaks and there are no other measurement issues (e.g., meters are accurately calibrated, correct tank chart is used, ATG is programmed correctly), then there should be a very nearly equal number of positive and negative daily variances over the period of record. If the number of positives and negatives is not closely balanced, then there is something going on that you need to investigate. Keep in mind that it is not necessarily a leak. There could be a meter-calibration problem or a tank-chart problem or some other problem with the measurements. But the inventory records may not be very useful for release detection unless the cause of the imbalance is identified.

Step #4: Look for “bounce” in the record.

It is not uncommon in inventory records to see a substantially larger than normal variance one day and a

similarly large variance, but with the opposite sign, the following day. This type of event is often referred to as “bounce,” which is usually attributable to some slip in the recordkeeping, perhaps a misreading of the gauge stick or an erroneous conversion from stick reading to gallons. Bounce could also be due to sales volume and physical inventory measurements not being taken at the same time, or failure to record a product delivery on the correct day. Because the errors are typically of similar magnitude and opposite sign, they do not have a significant effect on the overall inventory variance calculation, as long as they occur infrequently.

Step #5: Look for large discrepancies on delivery days.

Delivery-day variances are often larger than non-delivery-day variances. This is because tank-tilt and tank-chart errors will be accentuated by the typically large quantity of fuel that is added to the tank. But unusually large delivery-day variances that do not “bounce” back the next day may be an indication that a tank was overfilled. Alternatively, it might be a sign that the overfill prevention device was triggered before the entire quantity of fuel brought to the site was delivered into the intended tank.

What may have happened is that the driver dropped the excess fuel into an adjacent tank, even if the fuel had a different octane rating. This is often called a “cross drop.” Check for this by comparing inventory variances for all the tanks present at the site. You might find that on a given day, there was a 400-gallon shortage in the regular unleaded product, and a 410-gallon overage on the super product. If the normal daily variances are much smaller than this (say a few tens of gallons), then this is fairly conclusive evidence that a cross drop has occurred.

Depending on whether the cross drop was the result of an overfill or the activation of an overfill device and the driver’s response to the situation, a delivery spill may also have occurred.

Check the delivery receipt for before and after stick readings that the driver may have recorded for additional clues as to what happened. A post-delivery stick reading of 110 inches in a 92-inch diameter tank is a dead giveaway to an overfill event. If available, ATG delivery reports can also provide information about the after-delivery tank level and the amount of fuel that was actually delivered into each tank.

Step #6: Check meter calibration.

Look for meter-calibration stickers typically affixed to the dispensers by weights and measures people to determine if meter miscalibration may be an issue. Even if meters have been calibrated in the not-too-distant past, meter calibration is always something to consider when inventory variances are out of line.

Step #7: Evaluate the variances with a critical eye.

Are the daily variances in the hundreds of gallons most every day? If so, it may be difficult to see anything but a leak of epic proportions. Still, this type of record can be evidence of carelessness, unless the facility is a truck stop with extraordinarily high sales volume.

Do the daily inventory variances seem to good to be true? If a facility is receiving a delivery a day and the delivery variances are consistently in the single digits, you should begin to wonder. While there are completely automated inventory systems that can deliver this kind of accuracy, they are not in common use. The extreme case of “impossible” variance is if the daily variance is zero. If variances are zero more than about once a year, then it is fairly safe to conclude that the data are being fudged.

The most common fudging” technique is to calculate the book inventory and then either make the physical inventory equal the book value or find a value on the tank chart that is close to the book inventory and write it in. If you suspect fudging, look for errors in copying numbers such as transposing digits (the stick inventory is 3,572, but it is carried forward the next day as 5,372) that still

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somehow result in very small daily variances.

Another check on fudging is to see if the end-of-month stick inventory is carried forward to the beginning of the next month. Often, an actual beginning inventory number is used to start the month, but this number may be substantially different than the “fudged” stick inventory from the end of the previous month. In an accurate inventory record, the end stick inventory of the previous month is equal to the start stick inventory of the following month.

Step #8: If it's a blended system, look for significant gains in one product that may be approximately equal to significant losses in the other product.

This is often an indication that the blend ratio programmed into the cash register or point-of-sale (POS) system is not exactly equal to the blend ratio that is happening at the dispenser. This happens because the POS system tracks sales of mid-grade product separately from the other products. At the end of the day, the mid-grade sales are divided up and added to the regular and super product according to a fixed ratio (typically 60/40 or 70/30). If the dispenser is in fact blending in a ratio of 65/35, then the fraction of the mid-grade sales volume allocated to the regular and super products will be in error, and corresponding overages and shortages will appear in the regular and super inventory records.

One way to check for this type of error is to compare the sales numbers for the regular and super products obtained from the POS data (add the mid-grade sales in the proper ratio to the regular and super sales volume recorded by the POS system) with the sales numbers recorded by the mechanical totalizers at the dispensers for the regular and super product. If these numbers don't match almost exactly, then some adjustment in the blend ratio used to allocate the mid-grade sales to the regular and super product must likely be made.

Still scratching your head?

Now that spreadsheet programs with graphing capabilities are commonly available, the graphical analysis of inventory records is simple to do and can be very informative. I usually look at two plots. The first is a plot of the daily variances over time, the other is the cumulative variances (sum of the daily variances) over time. These plots can be done over a period of a month, but the cumulative variance, in particular, is most instructive when plotted over much longer periods, such as a year. The following three steps cover some things to look for in this regard.

Step #9: Evaluate long-term trends.

Cumulative variance plotted over periods of six months or a year can reveal longer-term trends that are often masked when shorter time periods are plotted, especially if the daily variances show a lot of scatter. The longer-term picture allows you to see the “forest” as well as the “trees” more easily. It may be necessary to eliminate some daily variance data points because they are so large they obscure the trends. For example, if there is a 5,000-gallon-plus daily variance that did not bounce, odds are that there is a delivery that was never recorded into the inventory records. This enormous variance will overwhelm smaller trends because the plotting software will automatically plot the data on a scale that accommodates this 5,000-gallon variance. Removal of such large outliers is often required to see more clearly what an inventory record is telling you.

Step #10: Look for a saw-tooth pattern.

A not uncommon pattern that appears when cumulative variance is plotted on a shorter time frame (e.g., a month or so) is a saw-tooth pattern. This pattern may show decreasing cumulative variance for several days, followed by a single positive variance approximately equal to the sum of the negative variances of the previous few days. A check of the data will reveal

that the negative variances occur on non-delivery days, while the positive variances occur on delivery days.

This pattern is indicative of a chart error or ATG calibration error. For example, if an ATG has been programmed for a 10,500-gallon tank when it is really monitoring a 10,000-gallon tank, then sales volume (metered at the dispenser) will be overestimated by the tank gauge, and the daily variance on non-delivery days will be negative. On delivery days, the volume of the delivery will also be overestimated, and the daily variance on delivery days will tend to be positive. Of course, this pattern will be inverted (positive variances on non-delivery days and negative variances on delivery days) if the ATG has been programmed for a 9,500 gallon tank when it is really monitoring a 10,000 gallon tank.

Depending on the magnitude of the chart error and the accuracy of the inventory records, this error may be very obvious, or it may be obscured. Although this error sounds like it might totally invalidate an inventory record, this is not the case. If the period of the inventory records is long relative to the period between deliveries, the net effect of the error is negligible, and the long-term trend of the cumulative variance will still be valid.

Step #11: Look for diverging variances in a blended system.

Plotting cumulative variances of both the low- and the high-grade products in a blended system on the same chart will clearly illustrate if there is a blending error. This will show up as diverging variances of approximately equal value, even over long periods of record. To remove the effects of blending error from the record, simply plot the sum of the variances of the low-grade and high-grade products.

Tip: Know What You Won't Know

Though inventory control may reveal leaks that escape other leak-detection methods, it is also true that

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DEP's SPCC Program for Aboveground Oil Storage Facilities

A Little Background

7he State Legislature adopted legislation in the spring of 2002 granting the DEP jurisdiction to enforce the federal Spill Prevention Control and Countermeasures (SPCC) regulations under 40 CFR Part 112 for certain retail and marketing facilities in the state. The state's SPCC statute, 38 M.R.S.A. § 570-K(5), also requires the DEP to provide education and outreach to AST facility owners and operators regarding spill prevention and control. The state SPCC statute is primarily intended to address concerns regarding contamination of groundwater and drinking water supplies from spills occurring at aboveground oil storage tank (AST) facilities in Maine. As of November, 2003, the Maine DEP had spent approximately \$2.4 million dollars linked to 715 oil spills from ASTs that occurred from 1995 through 1999. These figures do not include spills from residential and marine oil terminal ASTs. The largest number of these spills were heating oil releases at wholesale bulk plants, while the most costly AST spills were due to gasoline releases at AST retail gas stations.

The Federal SPCC Rule

The federal regulations under 40 CFR Part 112 require SPCC plans for AST facilities having a total aboveground oil storage capacity exceeding 1,320 gallons and that could potentially discharge to "navigable" waters. "Navigable waters" is broadly defined under the federal SPCC regulations and all, or virtually all, Maine facilities exceeding 1,320 gallons of aboveground oil storage capacity fall within the scope of federal SPCC regulations. "Oil" is also broadly defined, and includes products such as gasoline, kerosene, diesel, heating oil, lubricants and waste oil. For the purposes of the federal SPCC rule, all containers 55 gallons or greater in size count towards the total AST capacity of a facility.

An SPCC plan specifies measures to prevent and control oil spills from

an oil storage facility. An SPCC plan addresses the design features of the facility to prevent and control spills, regular inspections of the facility, training of personnel, spill response procedures, reporting and cleanup procedures, and a spill response contact list. Although the primary purpose of federal SPCC regulations is to address threats to surface water, rather than groundwater, properly written and executed SPCC plans also protect groundwater by reducing the number and extent of oil spills at AST facilities.

The State SPCC Program

The state SPCC statute does not impose any additional requirements for spill prevention and control for AST facilities beyond what the exist-

ing federal SPCC regulations require. The state statute only authorizes the DEP to enforce the existing federal SPCC facilities for a subset of the federal jurisdiction i.e., retail marketing and distribution facilities. Retail gas stations and bulk plants comprise the majority of facilities that are subject to the state SPCC statute. Airports and marinas comprise a smaller portion of facilities subject to the state SPCC statute. The DEP's SPCC program is developing a comprehensive list of oil AST facilities in the state, based upon several existing state agency databases. The list of facilities that appear to be subject to the state SPCC program currently contains approximately 470 facilities. Private AST facilities such as motor fleets, heating oil tanks for on-site consumption, and the like are not subject to

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there are some leaks that are invisible to inventory control. Most obviously, inventory will not tell you anything about what is happening beyond the meter in the dispenser.

For example, truck stops often have "satellite dispensers," where a second hose connected to the primary dispenser goes underground to the opposite side of the vehicle so both tanks of the truck can be fueled at the same time in a single sales transaction. Any product leaked from the piping that goes over to the satellite dispenser has already been accounted for by the meter in the primary dispenser and will not appear as a loss in the inventory record. Thus inventory control (and, for the same reason, SIR too) cannot be used for leak detection on satellite dispenser piping.

Also, if it is the meter itself that is leaking, the leak may remain undetected if the product is leaking out at a point on the meter after it has passed through the metering mechanism.

Inventory may not always be able to tell you what has happened. As always, the "garbage in/garbage out" rule applies. The value of inventory records in deciphering the history of a storage system is directly related to the accuracy and consistency with which the records are kept.

A Final Word

Although it's been a long time since I've heard anyone proclaim that inventory is the first line of defense against leaks, there is no question that inventory is still an indispensable business practice and a potentially valuable tool for a tank operator in detecting large releases or for a tank regulator in getting to the bottom of a release "after the fact." While inventory records can be laborious to decipher, the "Aha!" moments that sometimes occur when a plot of the data reveals a clear picture of a problem can also be a great feeling. For those of you who love a good detective story, inventory presents a real world opportunity to test your Holmesian skills.

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DEP's SPCC Program

(Continued from page 8)

the state SPCC statute. However, private non-retail/marketing facilities are still subject to the federal SPCC regulations if they trigger the 1320 gallon threshold of aboveground oil storage capacity.

While ASTs are not required to be registered with the DEP as are underground storage tanks (USTs), any underground piping at an AST facility is still subject to the provisions of the DEP's Chapter 691 that pertain to underground piping. Aboveground piping is subject to national fire codes as administered by the State Fire Marshal's Office. Permits from the State Fire Marshal's Office are required for most AST installations.

An important component of the DEP's education and outreach program are the SPCC technical assistance site visits to individual facilities. DEP staff started conducting the SPCC technical assistance site visits in the fall of 2003. There are two parts to the site visit: reviewing the facility's SPCC plan, if there is one, and inspecting the facility itself. In reviewing the SPCC plan DEP staff consider whether the plan accurately reflects facility conditions, is up-to-date, and is in compliance with the SPCC requirements. DEP staff will also look at whether the facility is adhering to the provisions of the plan. If there is no SPCC plan for the facility, staff will explain to the facility owner what an SPCC plan is and what is required, and will provide informational materials on developing an SPCC plan. The second part of the site visit is inspecting the facility. DEP staff look at the tanks, piping and valves, loading rack (if applicable), dispensers, and general maintenance and operational procedures. Staff follow up the site visits with written recommendations to the facility owner. DEP staff will continue conducting SPCC site visits during the 2004 field season.

If you would like more information on the Department's SPCC program for ASTs you can visit the DEP's SPCC web site at: www.state.me.us/dep/rwm/index.htm; or contact Sara Brusila at the DEP at (207) 287-4804, in-state toll free at 1-800-452-1942, or by e-mail at sara.brusila@maine.gov.

Paperwork, Again

What would a newsletter be if we didn't spend at least a little time ranting and raving about what we want to see for registration and removal forms. Seriously, as much as you hate writing it, we hate reading it. Even so, it forms an important record for us, you, future owners and operators, and the public at large as to the history of the site. So, here's some reminders of what we need:

1. The originals of registration and removal forms need to be submitted. Second or third generation faxes are not sufficient, especially when the documents we have to work with are not clear. Signatures must be originals and not photo copies. A fax may be used in an emergency but it must be followed by the original document.
2. If a registration is for a replacement, then the removal notice should be submitted at the same time or before the registration.
3. Both a full registration and a removal notice is required when replacing tanks or piping.
4. Removal notices need to include the installer's name if the tank(s) stored Class 1 Liquid.
5. The site assessor's name needs to be included for tank or piping removals if a site assessment is required.
6. A removal notice still needs to be submitted after permission has been granted to abandon a tank in place. The fact that the job is an abandonment in place should be recorded on the removal notice.
7. The supplemental automatic tank gauge (ATG) form must be completed when an ATG is being installed on a single walled tank to be used to exempt the tank from daily inventory and SIA leak detection requirements.
8. Certification of proper installation be submitted within 30 days of the completion of the installation.

Thanks very much from the bottoms of the hearts of DEP licensing staff.


May 1, 2004 Underground Storage Tank Installer License Renewals Approaching

A majority of our underground storage tank installer's certifications expire on May 1, 2004. All installers and inspector certifications expire two (2) years after issuance at which time they must be renewed. In order to receive certificate renewal, the applicant must submit an application for renewal to be processed by the Board prior to the date of expiration of certification, or upon payment of a late fee of \$10.00, up to 30 days after the date of certification. Any person who submits an application for renewal more than 30 days after the date of expiration is subject to all application and examination requirements governing new applicants. The Board may, for good cause and giving due consideration to the protection of the public, waive the requirements governing new applicants if the renewal application is made within two (2) years from the date of expiration. Payment of a \$150.00 recertification fee is also required with the form. If by chance you don't receive a recertification form or if you have any questions concerning your underground storage tank installer continuing education requirements, please call Theresa Scott at 207-287-2651 or email at Theresa.J.Scott@maine.gov.

The Maine Installer

**ME Board of Underground Storage Tank Installers
c/o ME Department of Environmental Protection
17 State House Station
Augusta, ME 04333**

PRSRT STD
U.S. Postage
PAID
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Augusta, ME

| Your Name on the Internet | Total Containment Files Bankruptcy | Crowded Mailbox? |
|--|--|---|
| <p>Our list of firms of installers and inspectors accepting new clients continues to grow. As of February, we had 17 names and firms on the list.</p> <p>If you are accepting new clients and are not on the list, let us know. That list is maintained on the DEP's website, and it's basically free advertising.</p> <p>So, if you are accepting new clients, let us know. Contact Jim Hynson at 287-7889 or james.r.hynson@maine.gov, or Theresa Scott at 287-7169 or theresa.j.scott@maine.gov.</p>  | <p>Petroleum Equipment developer and supplier Total Containment, Inc. filed for Chapter 11 Bankruptcy in the U.S. District Court for the Eastern District of Pennsylvania. The filing occurred on March 4, 2004.</p> <hr/> <p>The Board of Underground Storage Tank Installers will offer its next exam on April 30, beginning at 9:00 AM at the Pine Tree State Arboretum in Augusta. If you are interested in the exam, we encourage you to apply, even if you don't make this offering. There will be more in the future.</p> <hr/> | <p>Is your mailbox close to overflow from stuff BUSTI and the DEP send you? While sometimes we wish we didn't have to mail so many letters, unfortunately the reality is we've got to keep up the communication.</p> <p>We thought we could do all of us a favor by sending our information out via email. That would save the State money, and you from at least a little solid waste disposal.</p> <p>If you are interested in receiving newsletters and mailings via email, let us know by emailing us and thereby letting us know you're interested. You can email either:</p> <ul style="list-style-type: none">★ James.R.Hynson@maine.gov, or★ Theresa.J.Scott@maine.gov. <p>We'll keep track of who's interested, and will begin once there's enough folks to make it worth the effort.</p> |